

RECLAMATION

Managing Water in the West

Draft Environmental Assessment

East to West Transfers between Friant Division and South-of-Delta Central Valley Project Contractors, 2010-2011

EA-10-26



U.S. Department of the Interior
Bureau of Reclamation
Mid Pacific Region
South-Central California Area Office
Fresno, California

June 2010

Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Table of Contents

	Page
Section 1 Purpose and Need for Action	1
1.1 Background	1
1.2 Purpose and Need	1
1.3 Scope	2
1.4 Reclamation’s Legal and Statutory Authorities and Jurisdiction Relevant to the Proposed Federal Action	2
1.5 Potential Issues	2
Section 2 Alternatives Including the Proposed Action	4
2.1 No Action Alternative	4
2.2 Proposed Action	4
2.2.1 KCWA and/or SCVWD Facilitated Exchange	4
2.2.2 Recirculation Flows Exchange/Transfer	5
Section 3 Affected Environment and Environmental Consequences	6
3.1 Water Resources	6
3.2 Land Use	13
3.3 Biological Resources	14
3.4 Cultural Resources	15
3.5 Indian Trust Assets	17
3.6 Socioeconomic Resources	18
3.7 Environmental Justice	18
3.8 Air Quality	19
3.9 Global Climate Change	20
3.10 Cumulative Impacts	20
Section 4 Consultation and Coordination	22
4.1 Fish and Wildlife Coordination Act (16 USC § 661 et seq.)	22
4.2 Endangered Species Act (16 USC § 1531 et seq.)	22
4.3 National Historic Preservation Act (16 USC § 470 et seq.)	22
4.4 Migratory Bird Treaty Act (16 USC § 703 et seq.)	22
Section 5 List of Preparers and Reviewers	23
Section 6 References	23

Appendix A – Biological Species List

List of Acronyms and Abbreviations

AF	acre-feet
cfs	cubic-feet per second
CiF	City of Fresno
Class 1 water	supply of CVP water stored at Friant Dam which would be available for delivery from the Friant-Kern and Madera Canals as a dependable water supply during each irrigation season
Class 2 water	supply of non-storable CVP water which becomes available in addition to the Class 1 supply, and because of its uncertainty as to availability and time occurrence, would not be dependable in character and would be furnished only if and when available as determined by Reclamation
CVC	Cross Valley Canal
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act
DMC	Delta-Mendota Canal
DWR	Department of Water Resources
EA	environmental assessment
EA/IS	Environmental Assessment/Initial Study
ESA	Endangered Species Act
FID	Fresno Irrigation District
FKC	Friant-Kern Canal
FWCA	Fish and Wildlife Coordination Act
GHG	green house gases
ITA	Indian Trust Assets
KCWA	Kern County Water Agency
MBTA	Migratory Bird Treaty Act
National Register	Nation Register of Historic Places
NHPA	National Historic Preservation Act
OCID	Orange Cove Irrigation District
Recipient Districts	SLWD and/or WWD
Reclamation	Bureau of Reclamation
SCVWD	Santa Clara Valley Water District
SJVAB	San Joaquin Valley Air Board
SJVAPCD	San Joaquin Valley Air Pollution Control District
SLR	San Luis Reservoir
SLWD	San Luis Water District
SOD	south-of-Delta
SWP	State Water Project
SWRCB	State Water Resources Control Board
Transferring District	CiF, FID, and/or OCID
Transfer Water	Up to 57,500 AF of water made available for transfer by the Transferring Districts
USFWS	U.S. Fish and Wildlife Service
WWD	Westlands Water District

Section 1 Purpose and Need for Action

1.1 Background

To combat California's third consecutive year of drought, California Governor Arnold Schwarzenegger proclaimed on February 27, 2009 a state of emergency and ordered immediate action to manage the crisis. In the proclamation, the Governor used his authority to direct all state government agencies to utilize their resources, implement a state emergency plan and provide assistance for people, communities and businesses impacted by the drought. The proclamation, among other things:

- directed the Department of Water Resources (DWR) to expedite water transfers and related efforts by water users and suppliers; and
- directed the State Water Resources Control Board (SWRCB) to expedite the processing and consideration of the request by DWR for approval of the consolidation of the places-of-use and the points-of-diversion of the State Water Project (SWP) and the Central Valley Project (CVP) to allow flexibility among the projects and to facilitate water transfers and exchanges.

It is anticipated that in this fourth year of reduced water supply allocations (and reaffirmed in the March 30, 2010 California's Drought Update), DWR will continue to expedite water transfer requests and the SWRCB will again approve the consolidation of the places-of-use and the points-of-diversion between the SWP and CVP (DWR 2010).

1.2 Purpose and Need

South-of-Delta (SOD) CVP water service contractors experienced reduced water supply allocations in 2007, 2008, and 2009 due to hydrologic conditions and regulatory requirements. On May 4, 2010, Secretary of the Interior Ken Salazar announced that the Bureau of Reclamation's (Reclamation) 2010 SOD CVP water supply allocation for agricultural water service contractors have been increased to 40 percent, up from the initial 5 percent allocation in February of this year. The hydrologic conditions for 2010 are still evolving, and although conditions have improved somewhat since the beginning of the water year, it is likely that SOD CVP contractors would still need to supplement current and future supplies to meet demands because of past dry years and overall CVP operational constraints. SOD CVP contractors thus need to identify additional supplies to avoid shortages for their customers in 2010 and 2011.

The purpose of the proposed transfers are to allow expeditious water and an increase in the volume of water available to San Luis Water District (SLWD) and Westlands Water District (WWD) to supplement anticipated water shortages in 2010 and potential water shortages in 2011.

1.3 Scope

The City of Fresno (CiF), Fresno Irrigation District (FID), and/or Orange Cove Irrigation District (OCID), hereto referred to as the “Transferring Districts”, have agreed on the terms to transfer up to 57,500 acre-feet (AF) of their Friant Division CVP water to SLWD and WWD, hereto referred to as the “Recipient Districts”, and have requested Reclamation approval (see Figure 1). This Environmental Assessment (EA) has been prepared to examine the potential impacts to the affected environment associated with the Proposed Action and No Action Alternative.

The areas in which impacts may occur are the CVP service area boundaries of the Transferring and Recipient Districts. In addition, recaptured water stored in San Luis Reservoir (SLR) as a result of the San Joaquin River Restoration interim flows could be used as part of an exchange mechanism to facilitate the transfers. The Kern County Water Agency (KCWA), Santa Clara Valley Water District (SCVWD), and/or other Friant Division CVP contractors could be involved as exchange partners; however, except for minor conveyance losses that would be incurred as a result of these transfers, there would be no net gain or loss of water for these districts. Therefore, no potential impacts to any of these districts would occur and as a result this EA will not discuss KCWA and SCVWD in depth. The Proposed Action would be conveyed in existing facilities including the CVP, SWP, Cross Valley Canal (CVC), and/or other intermediate existing facilities. The transfers would occur during the 2010 water year, with the completion of delivery occurring no later than February 29, 2012; therefore, this will be the study period for evaluating the potential effects.

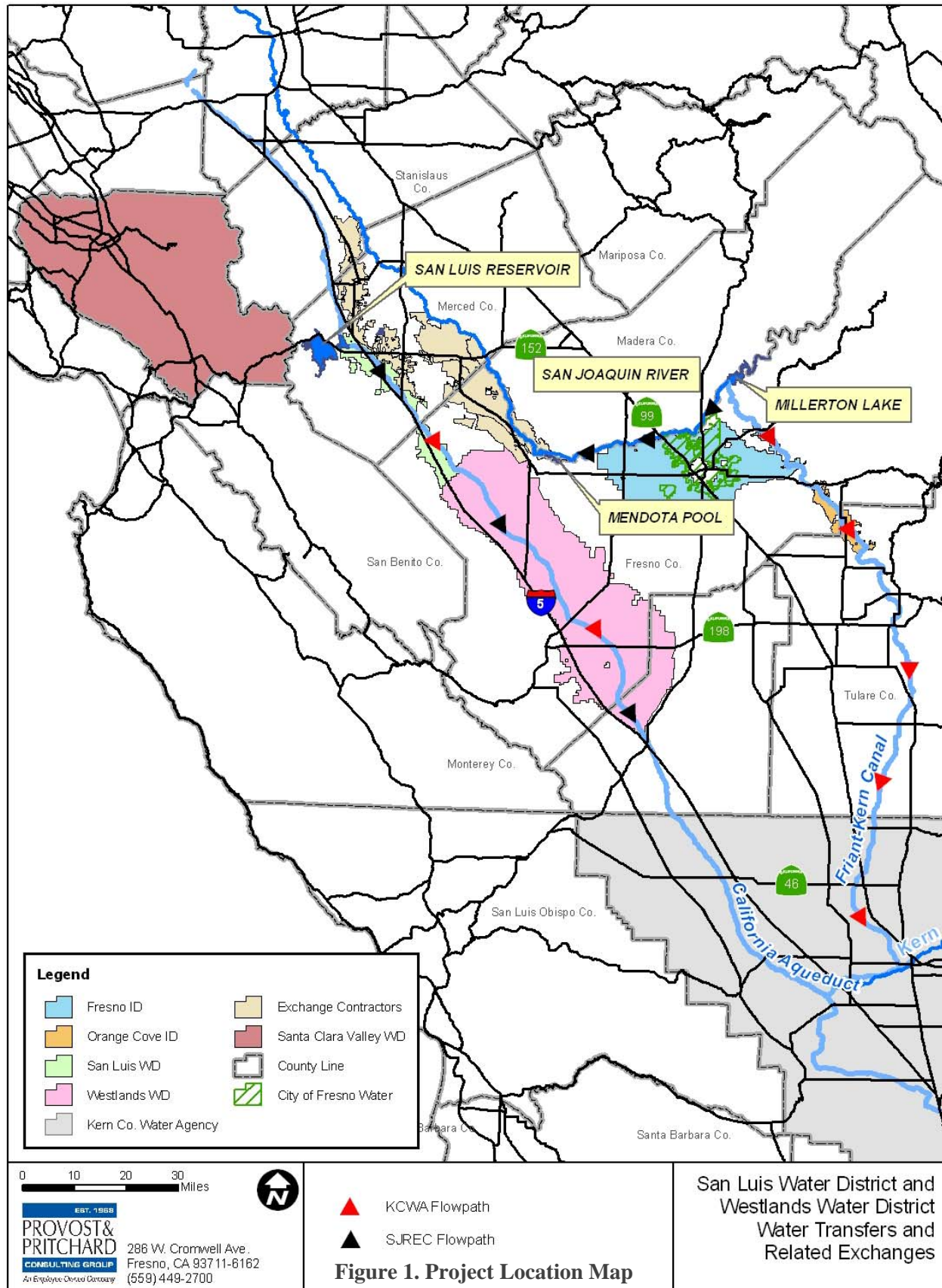
1.4 Reclamation’s Legal and Statutory Authorities and Jurisdiction Relevant to the Proposed Federal Action

Several Federal laws, permits, licenses and policy requirements have directed, limited or guided the National Environmental Policy Act analysis and decision-making process of this EA and include the following as amended, updated, and/or superseded:

- Title XXXIV Central Valley Project Improvement Act (CVPIA), October 30, 1992, Section 3405(a);
- Reclamation Reform Act, October 12, 1982;
- Reclamation's Interim Guidelines for Implementation of Water Transfers under Title XXXIV of Public Law 102-575 (Water Transfer), February 25, 1993;
- Reclamation and United States Fish and Wildlife Service (USFWS) Regional, Final Administrative Proposal on Water Transfers April 16, 1998; and

1.5 Potential Issues

Potentially affected resources and cumulative impacts in the project vicinity include: land use; Indian Trust Assets (ITA); environmental justice; air quality; global climate change; and water, biological, cultural, and socioeconomic resources.



Section 2 Alternatives Including the Proposed Action

2.1 No Action Alternative

Under the No Action Alternative, Reclamation would not approve the transfer of CVP water from the Transferring Districts to the Recipients either by facilitated exchange with KCWA and/or SCVWD, or by exchange with other Friant Division CVP contractors for their respective share of recirculated San Joaquin River Restoration interim flows that have been recaptured and stored in SLR.

2.2 Proposed Action

Reclamation proposes to approve east to west transfers of up to 57,500 AF from the Transferring Districts to the Recipient Districts. More specifically, CiF would transfer up to 30,000 AF of its 2010 CVP Friant Division Class 1 water; FID would transfer up to 22,500 AF of its 2010 CVP Friant Division Class 2 water (to the extent Class 2 water is declared by Reclamation and is allocated to FID); and/or OCID would transfer up to 5,000 AF of its 2010 CVP Friant Division Class 1 water (together referred to as the “Transfer Water”) to WWD and/or SLWD. The transfers would occur during the 2010 water year, with the completion of delivery to the Recipient Districts occurring no later than February 29, 2012 (the end of the 2011 water year).

Since there are no conveyance facilities in place by which to accomplish direct delivery of the Transfer Water to the Recipient Districts, each of the transfers would be facilitated by exchange.

2.2.1 KCWA and/or SCVWD Facilitated Exchange

The Transfer Water would be conveyed through the Friant-Kern Canal (FKC) and diverted into the CVC, either through the newly constructed FKC-CVC Intertie or through Arvin Edison Water Storage District’s turnout, for delivery to KCWA. In exchange, KCWA would make available in SLR an equivalent amount (minus the minor conveyance losses that would be incurred as a result of these transfers) of its 2010 SWP Table A contract water for subsequent delivery to the Recipient Districts via the San Luis Canal/California Aqueduct and/or the Delta-Mendota Canal (DMC).

Under this exchange mechanism, SWP water would be delivered outside the SWP’s permitted place-of-use. For 2009-2010, a petition was successfully filed and an order issued by the SWRCB consolidating the respective places-of-use of SWP and CVP. A similar order of consolidation and/or an order providing for the temporary change in the SWP place-of-use has been filed for 2010-2011 with the SWRCB, which is anticipated to be approved. Absent such approval, it is anticipated that SCVWD, which has both a SWP and CVP water contract, would be enlisted as an exchange partner. SCVWD would take KCWA’s SWP water and make a like-amount of its CVP supply available for delivery to the Recipient Districts.

2.2.2 Recirculation Flows Exchange/Transfer

It is anticipated that Friant Division CVP contractors could have up to the Transfer Water amount of water stored in SLR as a result of recaptured San Joaquin River Restoration interim flows. Under this mechanism, the Transfer Water in Millerton Lake (up to the amount stored in SLR, or 57,500 AF, whichever is smaller) would be exchanged for a like-amount with other Friant Division CVP contractors who have a supply of recirculated water in SLR that has been recaptured. At this point, the transfer between the Transferring Districts to the Recipient Districts could be completed utilizing the San Luis Canal/California Aqueduct and/or the DMC.

In addition, the Proposed Action would include the following commitments:

- no native or untilled land (fallow for 3 consecutive years or more) would be cultivated with the water involved in these actions;
- no new construction or modification of existing facilities would be required;
- as noted in Section 2.2.1, successful petition to consolidate the CVP and SWP places-of-use must be approved by the SWRCB in order to deliver KCWA's SWP water to either of the Recipient Districts;
- all transfers and exchanges involving recaptured water stored in SLR as a result of the San Joaquin River Restoration Interim Flows Project would be coordinated with the oversight committee for the San Joaquin River Restoration Program so as not to adversely impact the program or interim flows project;
- all transfers and exchanges involving CVP and/or SWP facilities and the CVC would be required to obtain the applicable approval/permission so as not to hinder the respective normal operations and maintenance of the facilities;
- all transfers and exchanges involving CVP and/or SWP facilities and the CVC would be required to schedule accordingly with Reclamation, DWR and/or KCWA so as not to hinder their respective obligations to deliver water to contractors, wildlife refuges, and due to regulatory requirements;
- all transfers and exchanges involving CVP and/or SWP water cannot alter the flow regime of natural waterways or natural water bodies such as rivers, streams, creeks, ponds, pools, wetlands, etc., so as to not have a detrimental effect on fish or wildlife, or their habitats; and
- all transfers and exchanges involving CVP and SWP water must comply with applicable federal, state and local laws, regulations, permits, guidelines and policies. (The Transferring and Recipient Districts are within Fresno County and per CVPIA 3405(a)(1)(m): "Transfers between Central Valley Project contractors within counties, watersheds, or other areas of origin, as those terms are utilized under California law, shall be deemed to meet the conditions set forth in subparagraphs (A) and (I) of this paragraph." Note: subparagraph I addresses consumptive use.)

Section 3 Affected Environment and Environmental Consequences

3.1 Water Resources

3.1.1 Affected Environment

The ten-year average allocation of SOD CVP water supplies delivered between 2000 and 2009 are summarized in Table 1 below. The table lists maximum delivery percentages of CVP water on a yearly basis for agriculture purposes. The ten-year average is 61.4 percent of contract amounts for agriculture. Refined allocation determinations are made throughout the contract year to align the allocation with the hydrologic conditions and pumping capabilities.

Table 1. Average SOD CVP Agricultural Allocation (as Percentage Amount of Contract)	
Contract Year	Allocation (percent)
2000	65
2001	49
2002	70
2003	75
2004	70
2005	85
2006	100
2007	50
2008	40
2009	10
Average	61.4

Similarly, the ten-year average allocation of Friant Division CVP water supplies delivered to the water contractors is described in Table 2 below. It also lists maximum deliveries of CVP water on a yearly basis for agriculture purposes from 2000 to 2009. The ten-year average is 96.5 percent of Class 1 and 8.6 percent of Class 2 contract amounts. Refined allocation determinations are made throughout the contract year to align the allocation with the hydrologic conditions.

Table 2. Friant Division CVP Allocations (as Percentage Amount of Contract)		
Contract Year	Allocation (percent)	
	Class 1	Class 2
2000	100	17
2001	100	5
2002	100	8
2003	100	8
2004	100	18

2005	100	10
2006	100	10
2007	65	0
2008	100	5
2009	100	5 ^a
Average	96.5	8.6

^aOn May 22, 2009, an uncontrolled season declaration was made by Reclamation. As a result, during the uncontrolled season, 18 percent of the Class 2 contract supply was taken by Friant Division contractors. On August 14, 2009, Reclamation revised the Class 2 declaration to 5 percent, which is the final allocation for the year.

3.1.1.1 2010 San Joaquin River Restoration Program Interim Flows Project

The Final EA and Initial Study (EA/IS), *Water Year 2010 Interim Flows*, as part of the San Joaquin River Restoration Program is a joint state and federal document that described the direct, indirect and cumulative effects of releasing interim flows from Friant Dam down the San Joaquin River from October 1, 2009 to September 30, 2010 in order to meet requirements under the San Joaquin River Restoration Settlement. A Finding of No Significant Impact/Mitigated Negative Declaration was subsequently signed on September 25, 2009.

The EA/IS described the potential locations and mechanisms for recapturing the interim flows within the San Joaquin River from Friant Dam to the confluence of the Merced River (Restoration Area), and in the Sacramento-San Joaquin River Delta. Dependent on the year type, the EA/IS identified that the water available for recapture would range between 0 and 384,000 AF, and would be subject to Mendota and Sack Dam operations; any agreements with landowners or other federal, state, and local agencies; special-status species requirements; and potential seepage. It is anticipated that Friant Division CVP contractors could have up to the Transfer Water amount of water stored in SLR as a result of recaptured 2010 San Joaquin River Restoration interim flows. The EA/IS and Finding of No Significant Impact/Mitigated Negative Declaration is hereby incorporated by reference (Reclamation 2009a).

3.1.1.2 Friant Division Central Valley Project Contractors

Fresno Irrigation District FID is located entirely within Fresno County and has contracts for approximately 26 percent of the average runoff of the Kings River (its main supply). In 2001 FID entered into a long-term renewal contract with Reclamation for 75,000 AF per year (AF/y) of Class 2 water (FID does not have a Class 1 CVP contract). FID delivers the water to its customers through 800 miles of canals and pipelines.

According to Table 2, FID has had an average supply of 8.6 percent Class 2 water, which equates to 6,450 AF/y from Millerton Lake. Currently, the 2010 water year Friant Division CVP Class 2 allocation is 30 percent, which potentially provides FID with 22,500 AF. As a result, FID is 16,050 AF above their ten-year average supply.

FID has potentially surplus Class 2 CVP water available for transfer by virtue of their ability to use banked groundwater supplies (assuming there is Class 2 water available to FID at the time when the transfer is requested). FID has previously banked non-project water that it is willing to

exchange with CiF for a like-amount of CiF's Friant Division CVP Class 1 water supply. The water that was banked (refer to Table 3 below) is composed primarily of storm runoff water, urban storm water discharges, and Kings River Fisheries Management Flows.

Table 3. Summary of Fresno Irrigation District Banking Operations (Waldron Project)						
Year	Beginning of Year Storage (AF)	Gross Deliveries (AF)	Minus 10% Losses (AF)	Recharge (AF)	Recovery (AF)	End of Year Storage (AF)
2005	0	3,547	355	3,192	0	3,192
2006	3,192	1,580	159	1,421	0	4,613
2007	4,613	3,328	333	2,995	0	7,608
2008	7,608	14,324	1,433	12,891	2,443	18,056
2009	18,056	10,989	1,098	9,891	10,167	17,780
Totals		33,768	3,378	30,390	12,610	

City of Fresno CiF is a municipal & industrial only Friant Division CVP contractor that utilizes a portion of their 60,000 AF/y Class 1 water supply to recharge the groundwater in and around the city, allowing them to withdraw groundwater on demand to serve municipal needs.

According to Table 2, CiF has had an average supply of 96.5 percent Class 1 water, which equates to 57,900 AF/y from Millerton Lake. With the current 2010 Friant Division CVP Class 1 allocation of 100 percent (60,000 AF), CiF is 2,100 AF above their ten-year average supply.

CiF has CVP water made temporarily surplus to their immediate needs by way of long standing internal exchange agreements with FID for banked groundwater supplies, since the two districts share a common groundwater basin and distribution facilities.

Orange Cove Irrigation District OCID has a water service contract with Reclamation for 39,200 AF/y of Friant Division CVP Class 1 water supplies. OCID provides retail water service to agricultural users within its district and operates a small hydroelectric facility at Friant Dam. The district obtains their CVP water supplies from 15 diversion points along the FKC between mileposts 35.87 and 53.32. OCID's distribution system consists of 105 miles of pipeline and one regulating reservoir with a capacity of 8 AF.

According to Table 2, OCID has had an average supply of 96.5 percent Class 1 water, which equates to 37,828 AF/y from Millerton Lake. With the current 2010 Friant Division CVP Class 1 allocation of 100 percent (39,200 AF), OCID is 1,372 AF above their ten-year average supply levels.

In the 2009 water year, OCID retained ("carryover") water within Millerton Reservoir into the 2010 Contract Year. The carryover water would be used to meet in-district water demands in the 2010 water year, which would free up the 5,000 AF of Class 1 water for transfer.

3.1.1.3 South-of-Delta Central Valley Project Contractors

San Luis Water District Based on Reclamation's water needs assessment, SLWD's water needs are 119,356 AF/y. SLWD does not currently maintain detailed records regarding irrigation methods; however, because of the area's hilly terrain and rolling topography, sprinkler irrigation continues to be used quite extensively. During the past ten years, a shift to both drip and micro irrigation systems has paralleled the conversion from row crops to permanent crops (i.e., orchards and vineyards). Drip or micro irrigation systems are currently used on approximately 23 percent of the irrigated acreage. Use of these systems is expected to increase in proportion to the shift to permanent crops.

The annual SOD CVP contract entitlement for SLWD is 125,080 AF, thus their ten-year average of CVP supply is 76,799 AF (61.4 percent – Table 1). With the current 2010 SOD CVP allocation of 40 percent for agriculture, SLWD is 26,767 AF below their ten-year average supply levels.

Westlands Water District

WWD entered into a long-term contract with Reclamation in 1963 for 1,008,000 AF/y of CVP water. In a stipulated agreement in 1981, the contractual entitlement to CVP water was increased to 1,150,000 AF/y. In 1999 WWD entered into an assignment contract with Reclamation for 6,260 AF/y of water from Mercy Springs Water District. Subsequently, WWD entered into an assignment contract with Reclamation for an additional 4,198 AF/y of water from Mercy Springs Water District. WWD has also entered into assignments for 27,000 AF/y from Broadview Water District, 2,500 AF/y from Centinella Water District, and 2,990 AF/y from Widren Water District. Reclamation signed an interim renewal contract with WWD effective from 1/1/2009 thru 2/28/2011.

WWD's water needs are 1,475,000 AF/y, based on Reclamation's water needs assessments. In addition to the CVP supply, approximately 200,000 AF of water is pumped from the underground aquifers during wet years. WWD owns some groundwater wells and supplies groundwater to some of their district farmers. Other wells in WWD are privately owned by water users within the district. Additional water supply sources in WWD include flood flows from the Kings River, which are available periodically, and are diverted from the Mendota Pool.

The annual SOD CVP contract entitlement for WWD is 1,168,648 AF, thus their ten-year average CVP supply is 717,550 AF (61.4 percent – Table 1). With the current 2010 SOD CVP allocation of 40 percent for agriculture, WWD is 250,091 AF below their ten-year average supply levels.

3.1.1.4 Groundwater Resources

The following information in this section regarding groundwater resources were obtained from California's Groundwater Bulletin 118 – Update 2003, which is hereby incorporated by reference (DWR 2003).

San Joaquin River Hydrologic Region The San Joaquin River Hydrologic Region covers approximately 9.7 million acres (15,200 square miles) and includes all of Calaveras, Tuolumne, Mariposa, Madera, San Joaquin, and Stanislaus counties, most of Merced and Amador counties,

and parts of Alpine, Fresno, Alameda, Contra Costa, Sacramento, El Dorado, and San Benito counties. The region is heavily reliant on groundwater.

San Luis Water District SLWD is located in the Delta-Mendota Subbasin of the San Joaquin River Hydrologic Region of the San Joaquin Valley Groundwater Basin. Groundwater in the Delta-Mendota Subbasin occurs in three water-bearing zones. These include the lower zone, which contains confined fresh water in the lower section of the Tulare Formation, an upper zone which contains confined, semi-confined, and unconfined water in the upper section of the Tulare Formation and younger deposits, and a shallow zone which contains unconfined water within about 25 feet of the land surface.

Changes in groundwater levels are evaluated on annual water level measurements by DWR and cooperators. Water level changes were evaluated at the quarter-township level using a DWR computer program. On average, the subbasin water level has increased by 2.2 feet total from 1970 through 2000. The period from 1970 through 1985 showed a general increase, topping out in 1985 at 7.5 feet above the 1970 water level. The nine-year period from 1985 to 1994 saw general declines in groundwater levels, reaching back down to the 1970 groundwater level in 1994. Groundwater levels rose in 1995 to about 2.2 feet above the 1970 groundwater level, then water levels fluctuated around this value until 2000.

Tulare Lake Hydrologic Region The Tulare Lake Hydrologic Region covers approximately 10.9 million acres (17,000 square miles) and includes all of Kings and Tulare counties and most of Fresno and Kern counties. The extensive use of groundwater has historically caused subsidence of the land surface primarily along the west side and south end of the San Joaquin Valley.

Westlands Water District WWD is located in the Westside Subbasin of the Tulare Lake Hydrologic Region of the San Joaquin Valley Groundwater Basin. The aquifer system comprising the Westside Subbasin consists of unconsolidated continental deposits of Tertiary and Quaternary age. These deposits form an unconfined to semi-confined upper aquifer and a confined lower aquifer. These aquifers are separated by an aquitard named the Corcoran Clay (E-Clay) member of the Tulare Formation.

Groundwater levels were generally at their lowest levels in the late 1960s, prior to importation of surface water. The CVP began delivering surface water to the San Luis Unit in 1967-68. Water levels gradually increased to a maximum in about 1987-88 and falling briefly during the 1976-77 drought. Water levels began dropping again during the 1987-92 drought, with water levels showing the effects until 1994. Through a series of wet years after the drought, 1998 water levels recovered nearly to 1987-88 levels.

Fresno Irrigation District, City of Fresno, and Orange Cove Irrigation District FID, CiF and OCID are located within the Kings Subbasin of the Tulare Lake Hydrologic Region of the San Joaquin Valley Groundwater Basin. The Kings Subbasin groundwater aquifer system consists of unconsolidated continental deposits. These deposits are an older series of Tertiary and Quaternary age overlain by a younger series of deposits of Quaternary age. The Quaternary age

deposits are divided into older alluvium, lacustrine and marsh deposits, younger alluvium, and flood-basin deposits.

Most well water levels experienced declines resulting from the 1976-77 drought. After the 1987-92 drought, wells in the northeast showed water levels from 10 to 40 feet below pre-1976-77 drought water levels. Water levels in the western subbasin experienced declines of 10 to 50 feet during the 1987-92 drought and are in various stages of recovery to mid-1980s levels.

3.1.1.5 Conveyance Facilities

California Aqueduct/San Luis Canal and San Luis Reservoir/O'Neill Forebay Except for the California Aqueduct, these joint-use facilities are a part of the SWP and CVP, respectively. The San Luis Canal is the Federally-built and operated section of the California Aqueduct and extends 102.5 miles from O'Neill Forebay in a southeasterly direction to a point west of Kettleman City. At this point, the facility becomes the State's California Aqueduct; however, the California Aqueduct actually begins at the Banks Pumping Plant where the canal conveys water pumped from the Sacramento-San Joaquin River Delta directly into O'Neill Forebay.

SLR serves as the major storage reservoir and O'Neill Forebay acts as an equalizing reservoir for the upper stage dual-purpose pumping-generating plant. O'Neill Forebay is used as the hydraulic junction point for Federal and State waters. Pumps located at the base of O'Neill Dam take water from the DMC through an intake channel (a Federal feature) and discharge it into O'Neill Forebay. The pumping-generating units lift the water from O'Neill Forebay and discharge it into SLR. When not pumping, these units generate electric power by reversing flow through the turbines. During irrigation months, water from the California Aqueduct flows through O'Neill Forebay into the San Luis Canal instead of being pumped into SLR. Both reservoirs also provide recreation and flood control benefits.

Cross Valley Canal The CVC, a locally-financed facility completed in 1975, extends from the California Aqueduct near Tupman to Bakersfield. It consists of four reaches which have capacities ranging from 890 cubic-feet per second (cfs) through the first two pumping plants to 342 cfs in the unlined extension near Bakersfield. The CVC is a joint-use facility operated by the KCWA that could convey water from the CVC to the Kern Water Bank, California Aqueduct, the City of Bakersfield, the Berrenda Mesa Property, the Kern River channel, the Pioneer Banking Project, various member units of KCWA and other districts who have access to the CVC.

Delta-Mendota Canal The DMC, completed in 1951, carries water southeasterly from the Tracy (C.W. "Bill" Jones) Pumping Plant along the west side of the San Joaquin Valley for irrigation supply, for use in the San Luis Unit, and to replace San Joaquin River water stored at Friant Dam and used in the Friant-Kern and Madera Canals. The DMC is about 117 miles long and terminates at the Mendota Pool, about 30 miles west of Fresno. The initial diversion capacity is 4,600 cfs, which is gradually decreased to 3,211 cfs at the terminus. The DMC is a part of the CVP, Delta Division.

Friant-Kern Canal The FKC carries water over 151.8 miles in a southerly direction from Friant Dam to its terminus at the Kern River, four miles west of Bakersfield. The FKC has an

initial capacity of 5,000 cfs that gradually decreases to 2,000 cfs at its terminus in the Kern River (Reclamation, 2010). The water conveyed in the FKC is from the San Joaquin River and is considered to be of good quality because it originates from snow melt from the Sierra Nevada. The water is used for municipal and industrial, and agricultural purposes in Fresno, Tulare, and Kern Counties. The FKC is a part of the CVP, which annually delivers about seven million AF of water for agricultural, urban, and wildlife use.

3.1.2 Environmental Consequences

3.1.2.1 No Action Alternative

Under the No Action Alternative, Reclamation would not approve the proposed transfers. The Transferring Districts would retain their CVP supplies and use them as allowed under their respective contracts, and the Recipient Districts would look for other sources of water to supplement their respective SOD CVP supplies. The Recipient Districts' current and projected water supply deficit would not be abated. As a result, the Recipient Districts would continue to pump available groundwater as has historically occurred and take actions to strategically reduce water needs within their respective district, which could include abandonment of crops in 2010.

There would be no impacts to any of the conveyance facilities, groundwater resources, and recaptured water associated with the San Joaquin River Restoration interim flows listed in the affected environment as conditions would remain the same.

3.1.2.2 Proposed Action

The Proposed Action would provide supplemental water supplies for the Recipient Districts in 2010 and 2011 to help deliver agricultural irrigation water to their customers within the appropriate places-of-use. It is anticipated that both 2010 and 2011 would be "dry" years and SOD CVP contractors would experience a reduction in their allocated contract supply; therefore, the Proposed Action would be beneficial to the Recipient Districts in meeting their in-district needs. The Transferring Districts currently have water available that is surplus to their respective immediate operational needs, and would still be able to adequately provide water to their customers under the Proposed Action. There would be no adverse impacts to the Recipient and Transferring Districts' water resources.

The CVC, CVP and SWP facilities would not be impacted as the Proposed Action must be scheduled and approved by Reclamation, KCWA and DWR. If a canal capacity prorate is required during the period this water is moving through the FKC, the prorate priority shall be pursuant to the tiers defined in Section VII of the Operational Guidelines for Water Service, Friant Division CVP, dated March 18, 2005. Additionally, the transfer must be conducted in a manner that would not harm other CVP contractors or other CVP contractual or environmental obligations, or SWP contractors. Therefore, normal operations of the conveyance facilities and obligations by the overseeing agencies to deliver water to their contractors and other obligations would not be impacted.

Water that has been made available as a result of recaptured San Joaquin River Restoration interim flows in SLR would be exchanged with the Transferring Districts for a like-amount of water in Millerton Lake. Other Friant Contractors, who have a supply of this water that has been recaptured, could be a potential exchange partner and would not experience a net gain or loss of

water. Utilization of stored interim flows water in SLR would need to be coordinated with the program's oversight committee. The Proposed Action would have no adverse impacts to the interim flows project or the river restoration program.

The Proposed Action would not increase groundwater pumping from what has historically occurred within the Kings Subbasin by the Transferring Districts. The transfers are made possible due to water that is surplus to the Transferring Districts' immediate operational needs. The small increase in water supply for the Recipient Districts would not add measurable groundwater in either the Westside and/or Delta-Mendota Subbasins, especially in view of the fact that most of the water would be efficiently applied and used by crops, with minimal amounts leaching below the root zone and into groundwater. There would be no adverse impacts to groundwater resources.

3.2 Land Use

3.2.1 Affected Environment

CiF serves municipal and industrial water supplies only. Their entire CVP contract supply is used to recharge the groundwater in and the city, allowing them to withdraw groundwater on demand to serve their customers. CiF and FID are located entirely within Fresno County and includes the rapidly growing Fresno-Clovis metropolitan area. FID is comprised of 245,000 acres, of which 150,000 are irrigable. The main crops in FID are grapes, almonds, oranges and tangerines, alfalfa, and miscellaneous vegetables.

OCID encompasses approximately 28,000 acres, of which approximately 26,788 are irrigated, in southeastern Fresno County and northwestern Tulare County. The main crops in OCID are citrus, including oranges, tangerines, lemons and limes, table grapes, prunes and plums, and olives—these crops comprise 86 percent of the irrigable acres in OCID.

SLWD is located on the western side of the San Joaquin Valley near the City of Los Banos, in both Merced and Fresno Counties. Construction of the Delta-Mendota Canal in the 1950s sparked major development of farmland in the San Joaquin Valley that led to the formation of the SLWD in January 1951. The district's current size is approximately 66,218 acres, which are planted mostly with tree crops.

WWD covers almost 950 square miles of farmland between the California Coast Range and the trough of the SJV in western Fresno and Kings Counties. Currently, WWD's boundaries encompass roughly 604,000 acres with an irrigable acreage of 570,000. More than 60 different crops are grown commercially in WWD, with the main crops being tomatoes, almonds, wheat, safflower, and cotton. The cropping patterns have changed over the years depending upon water availability, water quality, the agricultural economy and market factors. There is a trend toward planting increased acreage of vegetable and permanent crops, while acreage planted to cotton and grain have decreased.

3.2.2 Environmental Consequences

3.2.2.1 No Action

Under the No Action Alternative, continued land fallowing and deficit irrigation of permanent crops during the 2010 and 2011 growing seasons is probable. A large portion of the Recipient Districts' surface water supplies have been reduced due to the drought and deliveries in 2010 and 2011 are anticipated to be reduced. With insufficient water to continue with current agricultural practices, row crops would likely go unplanted, additional ground fallowed, and more permanent plantings being removed and taken out of production. Some cropland fallowed in 2010 would likely be put back into production in 2011 if hydrologic conditions improve.

3.2.2.2 Proposed Action

There would be no land use changes in FID or OCID as their water supplies would not be reduced below demands.

There would be a slightly positive impact on agricultural land use within the Recipient Districts compared with to the No Action Alternative due to the ability of some established row crops to remain in production and the enhanced survival of orchards (permanent crops).

3.3 Biological Resources

3.3.1 Affected Environment

By the mid-1940s, most of the valley's native habitat had been altered by man, and as a result, was severely degraded or destroyed. It has been estimated that more than 85 percent of the valley's wetlands had been lost by 1939 (Dahl and Johnson 1991). When the CVP began operations, over 30 percent of all natural habitats in the Central Valley and surrounding foothills had been converted to urban and agricultural land use (Reclamation 1999). Prior to widespread agriculture, land within the Proposed Action area provided habitat for a variety of plants and animals. With the advent of irrigated agriculture and urban development over the last 100 years, many species have become threatened and endangered because of habitat loss. Of the approximately 5.6 million acres of valley grasslands and San Joaquin saltbrush scrub, the primary natural habitats across the valley, less than 10 percent remains today. Much of the remaining habitat consists of isolated fragments supporting small, highly vulnerable populations (Reclamation 1999). The Proposed Action area is dominated by agricultural habitat that includes field crops, orchards, and pasture. The vegetation is primarily crops and frequently includes weedy non-native annual and biennial plants.

Reclamation requested an official species list from USFWS via the Sacramento Field Office's website: http://www.fws.gov/sacramento/es/spp_list.htm on April 29, 2010 (Appendix A). The list is for Kern and Santa Clara Counties and the following United States Geological Survey 7.5 minute quadrangles. Stratford, Westhaven, Kettleman City, Huron, Gujarral Hills, Avenal, La Cima, Coalinga, Burrel, Vanguard, Lemoore, Five Points, Westside, Harris Ranch, Calflax, Tres Pecos Farms, Lillis Ranch, Domengine Ranch, Stokes Mtn., Orange Cove North, Wahtoke, Orange Cove South, Sanger, Malaga, Conejo, Fresno South, Kearney Park, Raisin, Caruthers, Kerman, Jamesan, San Joaquin, Helm, Tranquillity, Coit Ranch, Levis, Cantua Creek, Chaney Ranch, Chounet Ranch, Tumey Hills, Monocline Ridge, Piedra, Academy, Friant, Clovis, Round

Mountain, Herndon, Fresno North, Gravelly Ford, Biola, Poso Farm, Firebaugh, Mendota Dam, Oxalis, Dos Palos, Hammonds Ranch, Broadview Farms, Charleston School, Ortigalita Peak Nw, Laguna Seca Ranch, Los Banos Valley, Turner Ranch, Delta Ranch, Santa Rita Bridge, San Luis Ranch, Ingomar, Volta, Los Banos, Howard Ranch, San Luis Dam, Hatch, Gustine, Crows Landing, and Newman (document number: 100429101903).

3.3.2 Environmental Consequences

3.3.2.1 No Action

Under the No Action Alternative, it is anticipated that there would be continued, and in some cases, additional land fallowing within the Recipient Districts. The effects of continued land fallowing on listed species is anticipated to be negligible, as most of the habitat types required by species protected by the Endangered Species Act (ESA) do not occur in the action area. Additionally, some cropland fallowed in 2010 would likely be put in production in 2011.

3.3.2.2 Proposed Action

The affects are similar to the No Action Alternative. Most of the habitat types required by species protected by the ESA do not occur in the Proposed Action area. The Proposed Action would not involve the conversion of any land fallowed and untilled for three or more years. While the Proposed Action would reduce the fallowed acreage, it would not substantially change the land use patterns of the cultivated or fallowed fields that may have some value to listed species or to birds protected by the Migratory Bird Treaty Act (MBTA). Some cropland fallowed in 2009 would likely be put in production in 2010. Since no natural stream courses would be utilized as part of the Proposed Action, there would be no effects on listed fish species. No critical habitat occurs within the area affected by the Proposed Action, so critical habitat would not be affected

The relatively small amounts of water associated with the Proposed Action (when compared to the amount of water supply deficit) and the requirement that no native lands be converted without consultation with USFWS would preclude impacts to wildlife, including federally listed species. Habitat for listed species is mostly absent in the vast agricultural areas where small declines in fallowed ground may occur, and listed species would not be affected by these small short term changes in the vast agricultural area.

3.4 Cultural Resources

Cultural resources is a broad term that includes prehistoric, historic, architectural, and traditional cultural properties. The National Historic Preservation Act (NHPA) of 1966 is the primary Federal legislation that outlines the Federal Government's responsibility to cultural resources. Section 106 of the NHPA requires the Federal Government to take into consideration the effects of an undertaking on cultural resources listed on or eligible for inclusion in the National Register of Historic Places (National Register). Those resources that are on or eligible for inclusion in the National Register are referred to as historic properties.

The San Joaquin Valley is rich in historical and prehistoric cultural resources. Cultural resources in this area are generally prehistoric in nature and include remnants of native human populations

that existed before European settlement. Prior to the 18th Century, many Native American tribes inhabited the Central Valley. It is possible that many cultural resources lie undiscovered across the valley. The San Joaquin Valley supported extensive populations of Native Americans, principally the Northern Valley Yokuts, in the prehistoric period. Cultural studies in the San Joaquin Valley have been limited. The conversion of land and intensive farming practices over the last century has probably disturbed many Native American cultural sites.

3.4.1 Affected Environment

Resources within the scope of this project include historic features of the built environment primarily those of the CVP and SWP. Components of the CVP have been determined eligible for inclusion in the National Register and have been prepared for inclusion in the National Register through a multiple property nomination. The CVP multiple property nomination is currently being reviewed for submission to the Keeper of the National Register for inclusion in the National Register.

Friant Dam is located on the San Joaquin River, 25 miles northeast of Fresno, California. Completed in 1942, the dam is a concrete gravity structure, 319 feet high, with a crest length of 3,488 feet. Construction of the canal began in 1945 and was completed in 1951. Both Friant Dam and the FKC are considered contributing elements of the CVP multiple property listing and are considered eligible for inclusion in the National Register.

The San Luis Unit is a joint Federal and State project. The Federal components of the San Luis Unit include O'Neil Pumping Plant and Intake Canal, Coalinga Canal, Pleasant Valley Pumping Plant, and the San Luis Drain. The features of the San Luis Unit are not considered contributing features of the CVP's National Register status. Additionally, the features of the San Luis Unit were all completed in the late 1960's and are not yet eligible for inclusion in the National Register.

3.4.2 Environmental Consequences

3.4.2.1 No Action

Under the No Action Alternative, there would be no Federal undertaking as described in the in the NHPA at Section 301(7). As a result, Reclamation would not be obligated to implement Section 106 of that NHPA and its implementing regulations at 36 CFR Part 800. Because there is no undertaking, impacts to cultural resources would not be evaluated through the Section 106 process. All operations would remain the same resulting in no impacts to cultural resources.

3.4.2.2 Proposed Action

Transferring water as described in the Proposed Action is an undertaking as described in Section 301(7) of the NHPA, initiating Section 106 of the NHPA and its implementing regulations at 36 CFR Part 800. All transfers would occur through existing facilities and water would be provided within existing service area boundaries to areas that currently use water. The Proposed Action would not result in modification of any existing facilities, construction of new facilities, change in land use, or growth. This action has no potential to cause effect to historic properties pursuant to the regulations at 36 CFR Part 800.3(a)(1). As a result, the proposed undertaking would result in no impacts to cultural resources.

3.5 Indian Trust Assets

ITA are legal interests in assets that are held in trust by the U.S. Government for federally recognized Indian tribes or individuals. The trust relationship usually stems from a treaty, executive order, or act of Congress. The Secretary of the Interior is the trustee for the United States on behalf of federally recognized Indian tribes. “Assets” are anything owned that holds monetary value. “Legal interests” means there is a property interest for which there is a legal remedy, such a compensation or injunction, if there is improper interference. ITA cannot be sold, leased or otherwise alienated without the United States’ approval. Assets can be real property, physical assets, or intangible property rights, such as a lease, or right to use something; which may include lands, minerals and natural resources in addition to hunting, fishing, and water rights. Indian reservations, rancherias, and public domain allotments are examples of lands that are often considered trust assets. In some cases, ITA may be located off trust land.

Reclamation shares the Indian trust responsibility with all other agencies of the Executive Branch to protect and maintain ITA reserved by or granted to Indian tribes, or Indian individuals by treaty, statute, or Executive Order.

3.5.1 Affected Environment

ITA are legal interests in assets that are held in trust by the U.S. Government for federally recognized Indian tribes or individuals. The trust relationship usually stems from a treaty, executive order, or act of Congress. The Secretary of the Interior is the trustee for the United States on behalf of federally recognized Indian tribes. “Assets” are anything owned that holds monetary value. “Legal interests” means there is a property interest for which there is a legal remedy, such a compensation or injunction, if there is improper interference. ITA cannot be sold, leased or otherwise alienated without the United States’ approval. Assets can be real property, physical assets, or intangible property rights, such as a lease, or right to use something; which may include lands, minerals and natural resources in addition to hunting, fishing, and water rights. Indian reservations, rancherias, and public domain allotments are examples of lands that are often considered trust assets. In some cases, ITA may be located off trust land.

Reclamation shares the Indian trust responsibility with all other agencies of the Executive Branch to protect and maintain ITA reserved by or granted to Indian tribes, or Indian individuals by treaty, statute, or Executive Order.

3.5.2 Environmental Consequences

3.5.2.1 No Action

Under the No Action Alternative, Reclamation would not approve the transfers and conditions would remain the same as existing conditions; therefore, there would be no impacts to ITA.

3.5.2.2 Proposed Action

Approval of the transfers between the Transferring Districts and the Recipient Districts would not involve any construction and would utilize existing conveyance facilities; therefore, activities associated with the Proposed Action would not impact ITA.

3.6 Socioeconomic Resources

3.6.1 Affected Environment

The agricultural industry significantly contributes to the overall economic stability of the San Joaquin Valley. The CVP allocations each year allow farmers to plan for the types of crops to grow and to secure loans to purchase supplies. Depending upon the variable hydrological and economical conditions, water transfers and exchanges could be prompted. The economic variances may include fluctuating agricultural prices, insect infestation, changing hydrologic conditions, increased fuel and power costs.

3.6.2 Environmental Consequences

3.6.2.1 No Action

Under the No Action Alternative, economic conditions in the vicinity of the Recipient Districts could worsen. As agricultural land continues to be taken out of production, there would be a decreasing need for farm labor, and farm equipment and supplies. The economic impacts of reduced agricultural production could adversely impact the affected environment.

3.6.2.2 Proposed Action

The Proposed Action would allow for water deliveries to be made to the Recipient Districts and would help maintain the stability of the agricultural market and economical vitality for the San Joaquin Valley to a certain degree. The transfers are temporary actions and would not result in long-term increases in water supplies that would encourage urbanization, construction or other land disturbing activities.

3.7 Environmental Justice

3.7.1 Affected Environment

The February 11, 1994, Executive Order 12898 requires federal agencies to ensure that their actions do not disproportionately impact minority and disadvantaged populations. The market for seasonal workers on local farms draws thousands of migrant workers, commonly of Hispanic origin from Mexico and Central America, into the San Joaquin Valley. Agriculture and related businesses are the main industry in the Recipient Districts, which provides employment opportunities for these minority and/or disadvantaged populations.

3.7.2 Environmental Consequences

3.7.2.1 No Action

The No Action Alternative could result in harm to minority or disadvantaged populations within the vicinity of the Recipient Districts because lands would be temporarily or perennially taken out of agricultural production, resulting in reduced need for farm labor.

3.7.2.2 Proposed Action

The Proposed Action would reduce dislocation and promote continued employment within the affected environment. The Proposed Action would not disproportionately impact economically disadvantaged or minority populations. The unemployment rate in the vicinity of the Recipient

Districts suggests that any actions that maintain seasonal jobs should be considered beneficial. Employment opportunities for low-income wage earners and minority population groups would be within historical conditions. Disadvantaged populations would not be subject to disproportionate impacts.

3.8 Air Quality

Section 176 (c) of the Clean Air Act (CAA) (42 U.S.C. 7506 (c)) requires that any entity of the Federal government that engages in, supports, or in any way provided financial support for, licenses or permits, or approves any activity to demonstrate that the action conforms to the applicable State Implementation Plan (SIP) required under Section 110 (a) of the CAA (42 U.S.C. 7401 (a)) before the action is otherwise approved. In this context, conformity means that such federal actions must be consistent with a SIP's purpose of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards and achieving expeditious attainment of those standards. Each federal agency must determine that any action that is proposed by the agency and that is subject to the regulations implementing the conformity requirements will, in fact conform to the applicable SIP before the action is taken.

On November 30, 1993, the Environmental Protection Agency promulgated final general conformity regulations at 40 CFR 93 Subpart B for all federal activities except those covered under transportation conformity. The general conformity regulations apply to a proposed federal action in a non-attainment or maintenance area if the total of direct and indirect emissions of the relevant criteria pollutants and precursor pollutant caused by the Proposed Action equal or exceed certain *de minimis* amounts thus requiring the federal agency to make a determination of general conformity.

3.8.1 Affected Environment

The project area is located within the San Joaquin Valley Air Basin (SJVAB) which is the second largest air basin in California. Despite years of improvements, the SJVAB does not meet State and Federal health-based air quality standards. The governing body over the SJVAB, the San Joaquin Valley Air Pollution Control District (SJVAPCD), has adopted stringent control measures to reduce emissions and improve overall air quality within the SJVAB.

3.8.2 Environmental Consequences

3.8.2.1 No Action

Under the No Action Alternative, there would be no impacts to air quality since conditions would remain the same as the existing conditions.

3.8.2.2 Proposed Action

Under the Proposed Action, movement of water between Transferring Districts and other potential exchange partners would be done via gravity flow and/or pumped using electric motors which have no emissions. The air quality emissions from electrical power have been considered in environmental documentation for the generating power plant. There are no emissions from electrical motors and therefore a conformity analysis is not required under the CAA and there would be no impact on air quality.

3.9 Global Climate Change

3.9.1 Affected Environment

Climate change refers to significant change in measures of climate that last for decades or longer. Burning of fossil fuels is considered a major contributor to perceived global climate change. Carbon dioxide, which is produced when fossil fuels are burned, is a greenhouse gas (GHG) that effectively traps heat in the lower atmosphere. Some carbon dioxide is liberated naturally, but this may be augmented greatly through human activities.

Human activity has substantially added to the amount of carbon dioxide in the atmosphere, primarily through burning of fossil fuels. This action enhances the natural greenhouse effect, and is likely contributing to an increase in global average temperature and related climate changes. The magnitude and significance of anthropogenic effects is being examined and debated and there is uncertainty associated with the science of climate change (EPA 2009).

Increases in air temperature may lead to changes in precipitation patterns, runoff timing and volume, sea level rise, and changes in the amount of irrigation water needed due to modified evapotranspiration rates. These changes may lead to impacts to California's water resources and project operations. While there is general consensus in their trend, the magnitudes and onset-timing of impacts are uncertain and are scenario-dependent (Anderson et al. 2008).

3.9.2 Environmental Consequences

3.9.2.1 No Action Alternative

Implementation of the No Action Alternative would involve no change on the composition of GHG in the atmosphere and therefore would not contribute to global climate change.

3.9.2.2 Proposed Action

GHG generated by a project is expected to be extremely small compared to sources contributing to potential climate change since the transfer of water would be conveyed mostly via gravity and little, if any, additional pumping from electric motors would be required. While any increase in GHG emissions would add to the global inventory of gases that would contribute to global climate change, the Proposed Action would result in potentially minimal increases in GHG emissions and a net increase in GHG emissions among the pool of GHG would not be detectable.

3.10 Cumulative Impacts

In order to meet irrigation demands, SLWD is pursuing other potential water transfers including those listed below. Due to the complexity of several necessary exchanges and Sacramento-San Joaquin River Delta pumping constraints, some of these proposed transfers may not come to fruition.

1. Transfer of up to 6,600 AF from the Exchange Contractor 5-Year Transfer Program;
2. Potential Transfer of up to 2,600 AF from DWR Drought Water Bank, subject to adequate surplus pumping capacity at DWR's Banks pumping facility;

3. Potential Transfer of up to 2,500 AF from Yuba long-term transfer program, subject to adequate surplus pumping capacity at DWR's Banks pumping facility;
4. Potential transfer of up to 5,300 AF of Cross Valley water supply, subject to adequate surplus pumping capacity at DWR's Banks pumping facility;
5. Transfer of 6,250 AF from FID and 5,000 AF from OCID (Reclamation 2009b);
6. Transfer and exchange of up to 6,000 AF of groundwater delivered via the DMC under a Warren Act Contract; and
7. Transfer and exchange of up to 6,000 AF of groundwater from the Tranquility Irrigation District.

It is reasonably foreseeable that SLWD may receive additional transfers totaling up to 42,500 AF from other sources (described above). Since SLWD's water deficit is over 107,000 AF with most of the water needs in the summer months, the total additional transfers into the district would still have the same effects as have been analyzed within this document.

In addition to the Proposed Action, WWD would obtain additional water via transfers to supplement district supplies, including those listed below, and another 50,000 AF of common land owner transfers. The remaining water supply deficit would be made up with groundwater pumping by individual landowners.

1. Transfer of up to 45,000 AF from the Exchange Contractor 5-Year Transfer Program;
2. Transfer of 7,500 AF from FID (Reclamation 2009b);
3. Potential transfer of up to 50,000 AF from San Joaquin River Tributary Group, subject to adequate surplus pumping capacity at the DWR's Banks pumping facility; and
4. Potential transfer and exchange of up to 10,000 AF from James Irrigation District.

It is also reasonably foreseeable that WWD would receive additional transfers totaling up to 162,500 AF from other sources (described above). Since WWD's current water deficit is over 1.12 million AF, with most of the water needs in the summer months, the total additional water transferred into the district would be small and the effects of water shortage would remain as have been analyzed within this document.

The Proposed Action was found to have no adverse impacts on water, biological, and cultural resources, ITA and socioeconomics. The Proposed Action is a one-time, temporary action, and when added to other actions do not contribute to cumulative adverse impacts to existing environmental conditions. Slight beneficial impacts to land use and environmental justice would be within the historical variations and would not contribute to cumulative impacts.

The Recipient Districts' other similar existing and foreseeable actions would have the same impacts as the Proposed Action since all are transfers and/or exchanges would utilize existing conveyance facilities. Coordination to schedule the deliveries for all these actions would be required with the appropriate overseeing agency to ensure that the normal operations of the facilities involved would not be hindered. Overall, there would be no adverse cumulative impacts from the Proposed Action and other related projects.

Section 4 Consultation and Coordination

4.1 Fish and Wildlife Coordination Act (16 USC § 661 et seq.)

The Fish and Wildlife Coordination Act (FWCA) requires that Reclamation consult with fish and wildlife agencies (federal and state) on all water development projects that could affect biological resources. The Proposed Action does not involve federal water development projects; therefore, the FWCA does not apply.

4.2 Endangered Species Act (16 USC § 1531 et seq.)

Section 7 of the ESA requires Federal agencies, in consultation with the Secretary of the Interior, to ensure that their actions do not jeopardize the continued existence of endangered or threatened species, or result in the destruction or adverse modification of the critical habitat of these species.

The Proposed Action would not change the land use patterns of the cultivated or fallowed fields that do have some value to listed species. In addition, the short duration of the water availability, the requirement that no native lands be converted without consultation with the USFWS, and the stringent requirements for transfers under applicable laws would prevent any adverse impact to any federally listed species or any critical habitat.

4.3 National Historic Preservation Act (16 USC § 470 et seq.)

The NHPA of 1966, as amended (16 USC 470 *et seq.*), requires that federal agencies give the Advisory Council on Historic Preservation an opportunity to comment on the effects of an undertaking on historic properties, properties that are eligible for inclusion in the NRHP. The 36 CFR Part 800 regulations implement Section 106 of the NHPA.

Section 106 of the NHPA requires federal agencies to consider the effects of federal undertakings on historic properties, properties determined eligible for inclusion in the NRHP. Compliance with Section 106 follows a series of steps that are designed to identify interested parties, determine the APE, conduct cultural resource inventories, determine if historic properties are present within the APE, and assess effects on any identified historic properties. The activities associated with the Proposed Action would include no new ground disturbance, no change in land use, and the use of existing conveyance features to move and store water. Reclamation has determined that there would be no potential to affect historic properties by the Proposed Action pursuant to 36 CFR 800.3(a)(1).

4.4 Migratory Bird Treaty Act (16 USC § 703 et seq.)

The MBTA implements various treaties and conventions between the U.S. and Canada, Japan, Mexico and the former Soviet Union for the protection of migratory birds. Unless permitted by regulations, the MBTA provides that it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or

product, manufactured or not. Subject to limitations in the MBTA, the Secretary of the Interior may adopt regulations determining the extent to which, if at all, hunting, taking, capturing, killing, possessing, selling, purchasing, shipping, transporting or exporting of any migratory bird, part, nest or egg will be allowed, having regard for temperature zones, distribution, abundance, economic value, breeding habits and migratory flight patterns.

The Proposed Action would not change the land use patterns of the cultivated or fallowed fields that do have some value to listed species or birds protected by the MBTA; therefore, the Proposed Action would have no effect on birds protected by the MBTA.

Section 5 List of Preparers and Reviewers

Michael Inthavong, Natural Resources Specialist, SCCAO
Jennifer Lewis, Ph.D., Wildlife Biologist, SCCAO
BranDee Bruce, Archaeologist, MP-153
Rena Ballew, Repayment Specialist, SCCAO – Reviewer
Chuck Siek, Supervisory Natural Resources Specialist, SCCAO – Reviewer
Rick Besecker, Provost & Pritchard Consulting Group

Section 6 References

- Anderson, J., F. Chung, M. Anderson, L. Brekke, D. Easton, M. Ejetal, R. Peterson, and R. Snyder. 2008. Progress on Incorporating Climate Change into Management of California's Water Resources. *Climatic Change* (2008) 87 (Suppl 1):S91–S108 DOI 10.1007/s10584-007-9353-1.
- Dahl, T. E., and C. E. Johnson. 1991. Status and Trends of Wetlands in the Conterminous United States, Mid-1970's to Mid-1980's. U.S. Department of the Interior, Fish and Wildlife Service, Washington, DC. 28 pp.
- DWR (Department of Water Resources). 2003. California's Groundwater, Bulletin 118. <http://www.water.ca.gov/groundwater/bulletin118/update2003.cfm>, accessed September 22, 2009.
- DWR (Department of Water Resources). 2010. California's Drought Update. <http://www.water.ca.gov/drought/docs/DroughtUpdate-033010.pdf>, accessed June, 2010.
- EPA (Environmental Protection Agency). 2009: Climate Change, Basic Information. <http://www.epa.gov/climatechange/basicinfo.html>, accessed September 23, 2009.
- Reclamation (U.S. Bureau of Reclamation). 1999. Final Programmatic Environmental Impact Statement for the Implementation of the CVPIA, October 1999.

Reclamation (U.S. Bureau of Reclamation). 2009a. San Joaquin River Restoration Program Water Year 2010 Interim Flows Project Final Environmental Assessment/Initial Study and Finding of No Significant Impact/Mitigated Negative Declaration.

Reclamation (U.S. Bureau of Reclamation). 2009a. Transfer of Central Valley Project Water to Kern County Water Agency in Exchange for State Water Project Water Delivered to San Luis Water District and Westlands Water District Final Environmental Assessment EA-09-128 and Finding of No Significant Impact.

Reclamation (U.S. Bureau of Reclamation). 2010. United States Bureau of Reclamation. http://www.usbr.gov/projects/Project.jsp?proj_Name=Friant%20Division%20Project, accessed: January, 2010.

USFWS (U.S. Fish and Wildlife Service). 1998. Recovery plan for upland species of the San Joaquin Valley, California. Region 1, Portland, OR. 319 pp.

USFWS (U.S. Fish and Wildlife Service). 2009. http://www.fws.gov/sacramento/es/spp_lists/auto_list_form.cfm. Accessed September 21, 2009. Document Number 090921084619. Site last updated January 29, 2009.

Appendix A – Biological Species List